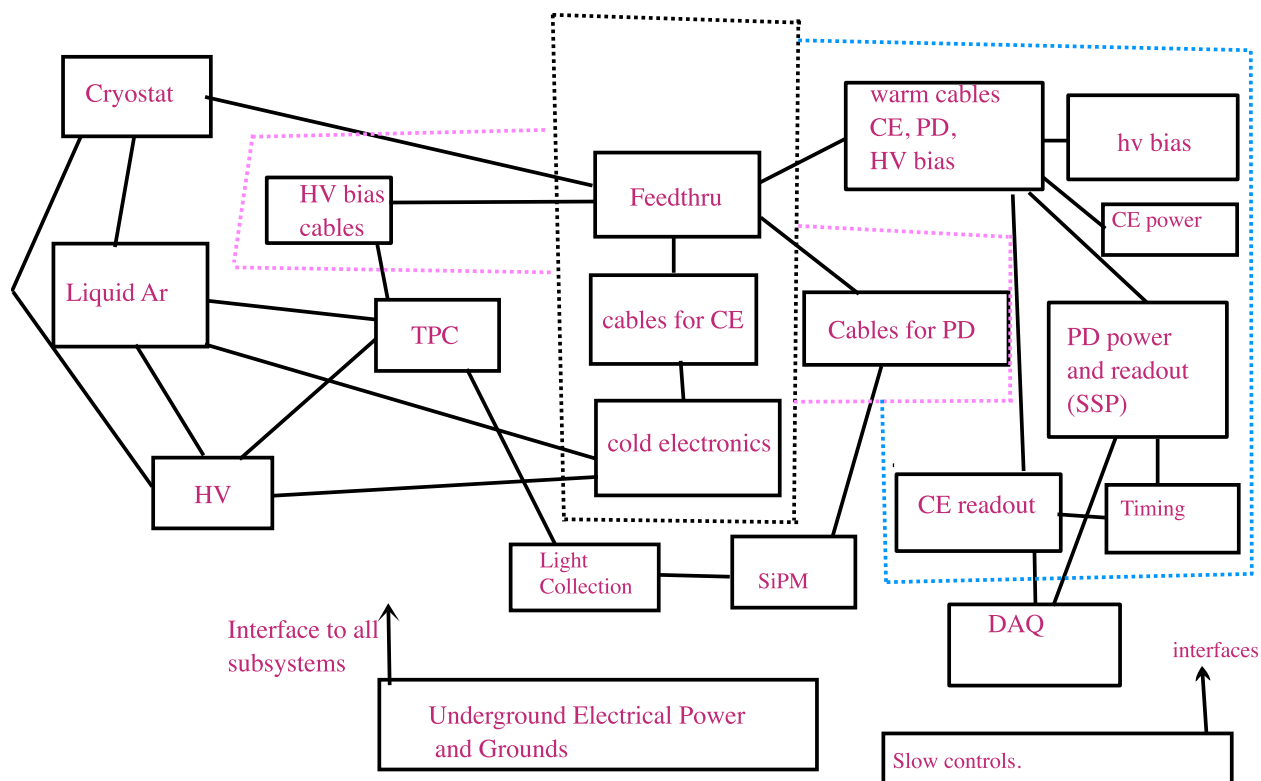


Discussion regarding project responsibility towards DUNE far detector electronics.



This note is an attempt to organize the definition of the project regarding electronics development for the DUNE far liquid argon detector. This organizational structure does not negate any of the current R&D activities. It simply puts them in proper context and identifies all interfaces.

In the chart above, the boxes correspond to physical deliverables. For each of the deliverables there should be definition of functionality and what is included. This will be one of the tasks of the project. Each line corresponds to a physical or electrical interface that must be defined. This definition should include clarification of what is to be achieved and who is responsible for integration of the two relevant systems.

There is debate over how to define the “electronics project” for DUNE. This has often been referred to in the past as “cold electronics”. But as can be seen in the chart there are many complexities that go beyond the “cold electronics” that reads and digitizes the signals from the TPC anode plane wires. Henceforth we will call the project simply “Electronics and Readout” or “E&R”. There are three choices for E&R given the above graphic.

E&R scope could be only within the black dashed lines. Or it could be expanded to include the cold HV bias cables and cold Photon System cables. Or it could be expanded further to include all electronics in the warm excluding slow controls and monitoring.

The deliverable from the E&R project is a WBS dictionary and a cost estimate for CD2. Other milestones that must be included are development in collaboration with SBND project and the CERN prototyping program. There will need to be a clear agreement over what is to be delivered to SBND from DUNE and what is to be expected from SBND in terms of technical information.

If BNL were to be the project manager for any of these three options then there would have to be consensus over the responsibilities and authorities of this manager. The system is critical to the DUNE project and therefore the manager needs good support and independence.

- The E&R manager needs to have clear definition of the project scope.
- The E&R manager must have authority to convene broad meetings and get clarification of the numerous interfaces.
- The E&R manager must have sufficient financial authority over the E&R budget to obtain the needed engineering and prototyping resources.
- The E&R manager must have the responsibility to seek collaboration broadly to obtain the needed scientific and technical resources from a broad set of international institutions.

June 18, 2015 drafted by Milind V. Diwan (update June 26, 2015)